



PSYCHE.

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Anatomy of the Plant-lice.

A "Contribution to the Anatomy and Histology of the Plant-lice, of the Coccidae in particular, by E. L. Mark," in the *Archiv für mikroskopische Anatomie*, Bd. xiii, gives an exposition of the organs concerned in the acquisition and digestion of food, and treats the same under the heads :

1. Mouth-parts,
2. Alimentary Canal, and
3. Accessory Organs of Alimentary Canal, the latter being the salivary glands and the Malpighian vessels.

An attempt is made to homologize the elements — to which special names are given — of the chitinous frame-work of the mouth parts in different genera of the Coccidae.

Observations on the method of extruding the setæ, four in number, which compose the sucking tube, follow. A peculiar sack-like organ, enveloping the extensive loop which the bundle of setæ often forms within the abdomen, is found to be present in each of the four groups into which the Coccidae have been divided by Targioni-Tozzetti, although this author denies the existence of such an organ. The earlier observations of Dujardin are thus in the main corroborated.

A complicated pumping apparatus is also ascribed to these insects.

The exceedingly peculiar and interesting relations of the different parts of the intestinal canal, not very successfully explained by Leydig, — whose mistakes Lubbock was hardly more successful in correcting — but much better understood by

Targioni-Tozzetti, are elucidated, with some corrections to the last named author.

Under the head of organs accessory to the intestinal canal, the author announces the discovery of *salivary glands*, and it is to an exact exposition of the anatomical and histological nature of these organs that a large portion of the article is devoted. The organs in question have been previously seen and described, but, from a want of exact topographical and histological knowledge, have been incorrectly assigned to the *nervous* system. The salivary glands are found to exist in the Aphidae as well as in the Coccidae, and in both families have the same general plan of structure. A pair of sack-like, more or less extensively lobed glands, placed over the mouth-parts, and flanking the subœsophageal ganglion, are traversed each by an excretory duct, arising by a varying number of finely punctured tubes, and passing forward and downward to unite with its fellow of the opposite side to form a short stem; the latter empties directly into the œsophagus at its initial end.

Another organ, thought to be a second salivary gland, of somewhat different function, is found to exist in certain of the Coccidae (*Aspidiotus* and *Chionaspis*).

The Malpighian vessels are very briefly considered.

The article is illustrated by three colored plates drawn by the author.

Edward L. Mark.

Notes on Attaci.

Telea Polyphemus. Larva feeds upon *birch*, oak, elm, maple, hazel, cherry, walnut, willow, linden. I should think that the fact of its feeding upon willow might be of value to any one who intends to raise silk, for willow is easily cultivated and grows rapidly. From May 25 to July 15.

Actias Luna. Larva eats *birch*, oak, walnut, hop hornbeam, chestnut. I once found a small birch tree in Weston nearly stripped by *Luna* larvæ. I counted them carefully, and found that there were no less than forty-five. With this exception, I have never found more than five or six on one tree. Full grown larvæ vary very much in size. In the *Can. Ent.*, vol. vi, p. 86, Mr. Gentry describes a variety of the larva in which